pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0038385**
Facility Type	**Non-Municipal**	APS ID	**275688**
Major / Minor	**Minor**	Authorization ID	**1378138**

Applicant and Facility Information

Applicant Name	**Defense Distribution Center, Susquehanna**	Facility Name	**Defense Distribution Center, Susquehanna**
Applicant Address	DS-FSE 3rd Street & "S" Avenue Bldg 750-1 New Cumberland, PA 17070-5002	Facility Address	3rd Street & S Avenue Bldg 750-1 New Cumberland, PA 17070-5002
Applicant Contact	Jeffrey Redline	Facility Contact	Donald Estep
Applicant Phone	(717) 770-4949	Facility Phone	(717) 770-2950
Client ID	77778	Site ID	452873
Ch 94 Load Status	Not Overloaded	Municipality	Fairview Township
Connection Status	No Limitations	County	York
Date Application Received	December 1, 2021	EPA Waived?	No
Date Application Accepted	December 17, 2022	If No, Reason	Significant CB Discharge

Purpose of Application: This is an application for NPDES renewal.

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	February 14, 2023
x		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for Daniel W. Martin	April 4, 2023
x		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	April 4, 2023

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Defense Distribution Center Susquehanna located at 3rd Street, New Cumberland, PA 17070 in York County, municipality of Fairview. The existing permit became effective on June 1, 2017 and expired on May 31, 2022. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on December 1, 2021.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's receiving waters attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility is a 0.2 MGD average annual treatment facility. The applicant anticipates proposed upgrades to the treatment facility in the next five years (i.e. software upgrades). The NPDES application has been processed as a Minor Sewage Facility due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to York County and Fairview Township and the notice was received by the parties on August 16, 2021 and August 13, 2021. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be the Susquehanna River. The Susquehanna River discharges into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for warm water fishes (WWF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

The Susquehanna River is a Category 5 stream listed in the 2022 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an impaired stream for (a) aquatic life due to pH/acidity/caustic from an unknown source; and (b) fish consumption due to PCBs from an unknown source. The receiving waters is not subject to a local total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- **Monitoring for nitrogen species and phosphorus shall be reduced to 1x/wk**
- **Due to the EPA triennial review, monitoring for E. Coli shall be 1x/quarter.**

Sludge use and disposal description and location(s): Sewage sludge disposed at Capital Region Water in Dauphin County, Harrisburg, PA and at Kline's Services in Lancaster County, Salunga. The sewage sludge is disposed for agricultural utilization.

The proposed permit will expire five (5) years from the effective date.

Based on the review in this report, it is recommended that the permit be drafted. DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.

1.0 Applicant

1.1 General Information

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name:	Defense Distribution Center, Susquehanna
NPDES Permit #	PA0038385
Physical Address:	5750 3rd Street New Cumberland, PA 17070
Mailing Address:	5750 3rd Street New Cumberland, PA 17070
Contact:	Donald Estep Environmental Protection Specialist (717) 770-2950 Donald.estep@dla.mil
Consultant:	Wayne Stoner Environmental Compliance Specialist HDR, Inc. Wayne.stoner@hdrinc.com (717) 254-7062

1.2 Permit History

Permit submittal included the following information.

- NPDES Application
- Effluent Sample Data

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 5750 3rd Street, New Cumberland, PA 17070. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

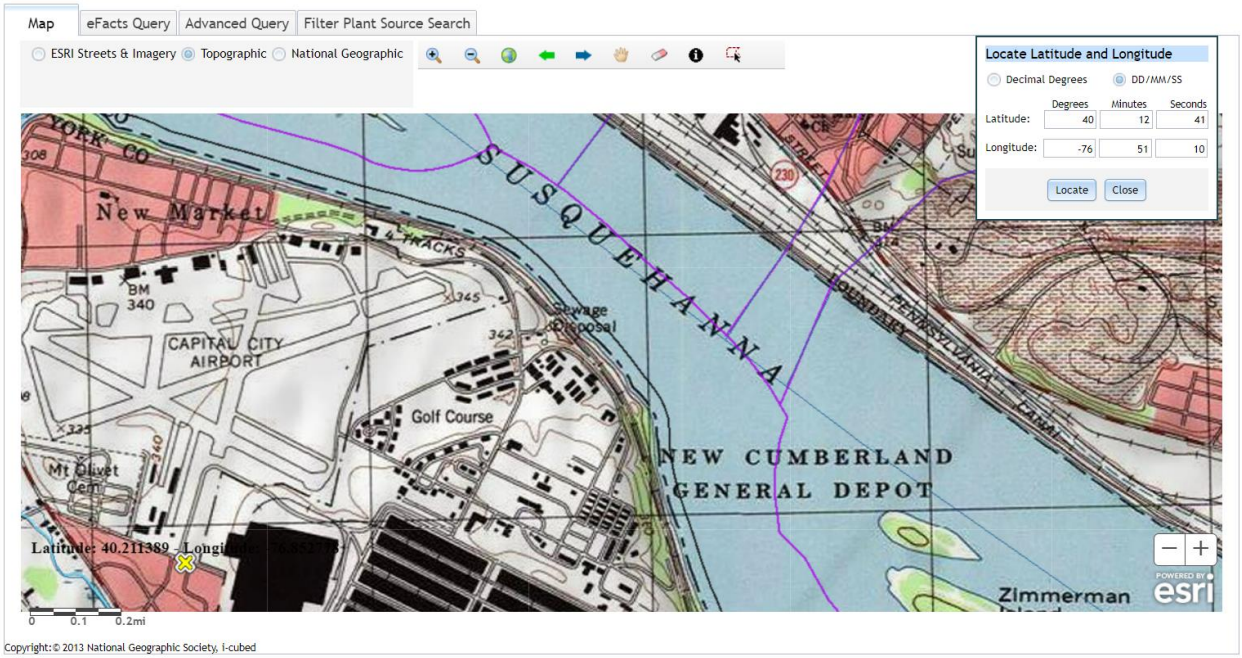
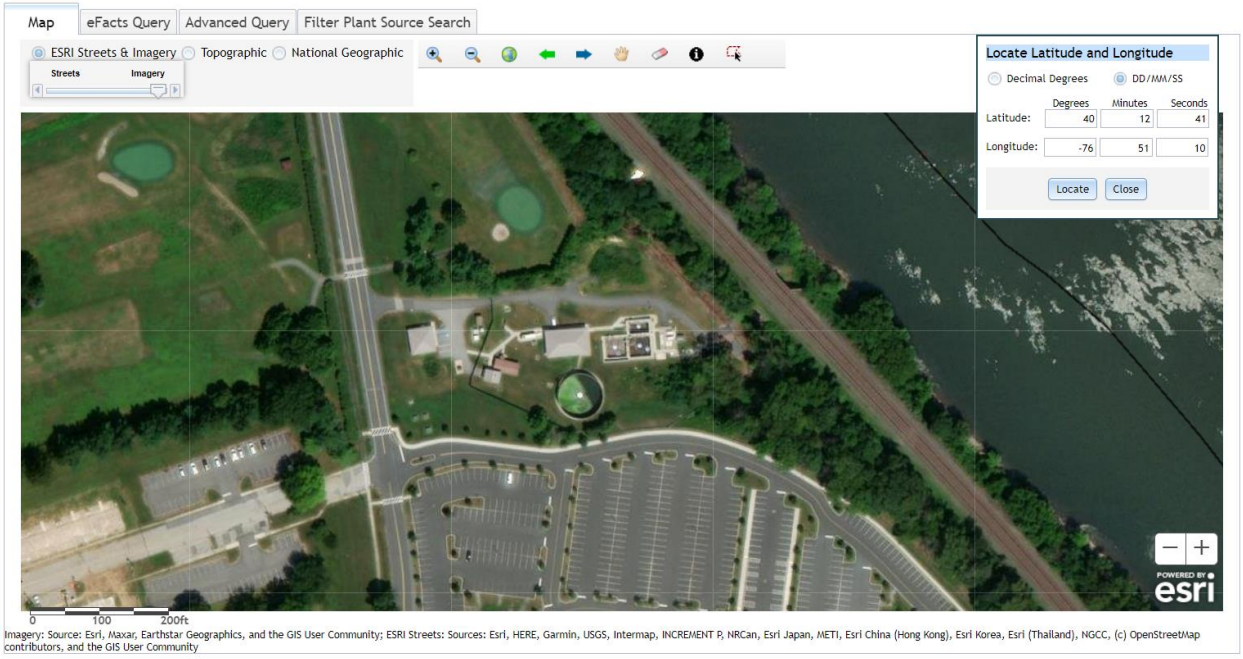


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The facility receives 100% of the wastewater generated by the Defense Distribution Center Susquehanna.

The facility did not receive hauled in wastes in the past three years and does not anticipate receiving hauled-in wastes in the next five years.

The facility does not have any commercial/industrial users.

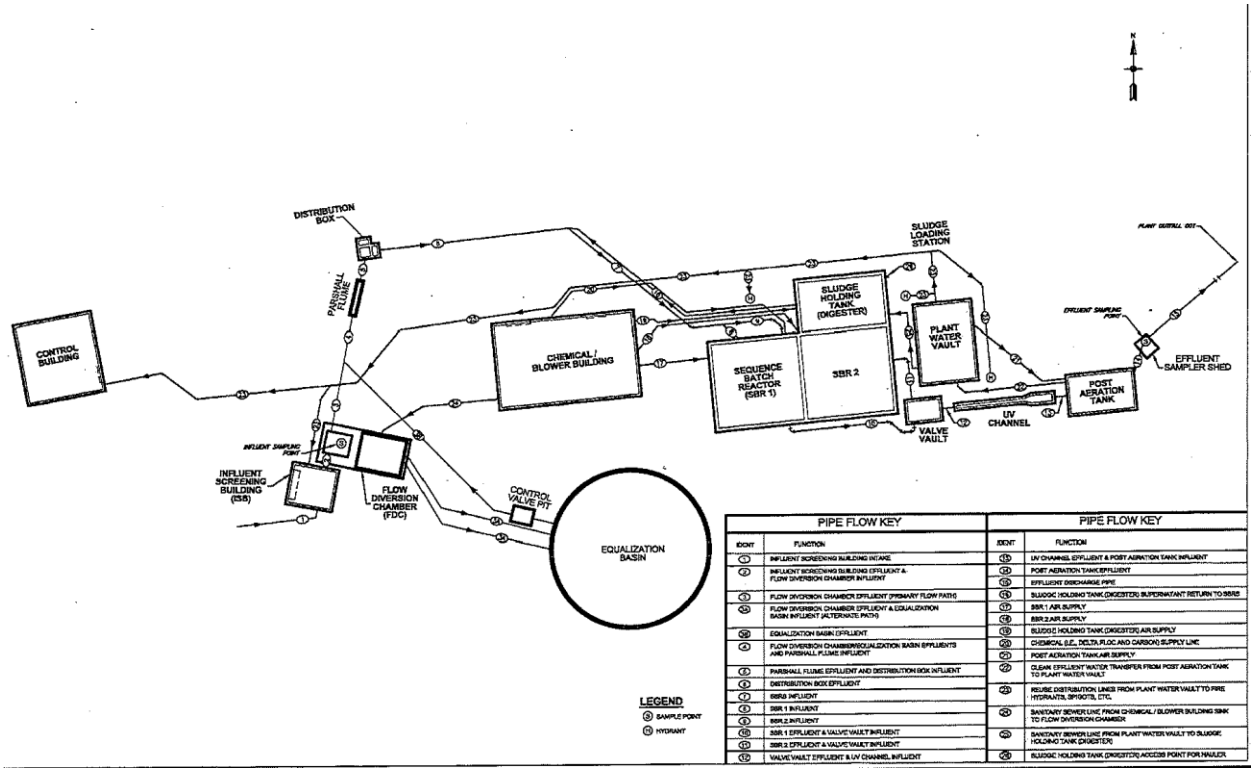
2.2 Description of Wastewater Treatment Process

The subject facility is a 0.2 MGD design flow facility. The subject facility treats wastewater using an equalization basin, a SBR, a UV unit for disinfection, and a post aeration unit prior to discharge through the outfall. The facility is being evaluated for flow, pH, dissolved oxygen, ultraviolet disinfection, CBOD5, TSS, fecal coliform, nitrogen, and phosphorus. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary				
Treatment Facility Name: Defense Distribution Center Susquehanna				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.2
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.32	790	Not Overloaded	Aerobic Digestion	

A schematic of the of the treatment process is depicted.



2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	001	**Design Flow (MGD)**	.5
Latitude	40º 13' 10.00"	**Longitude**	-76º 50' 12.00"
Wastewater Description:	Sewage Effluent		

2.3.1 Operational Considerations- Chemical Additives

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following chemicals as part of their treatment process.

- Aluminum sulfate (Delta Floc 807) for aid in solids settling to remove phosphates
- Carbon for food supplement for bugs

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40° 13' 10.00" , **Longitude** 76° 50' 12.00" , **River Mile Index** 67.19 , **Stream Code** 06685

Receiving Waters: Susquehanna River

Type of Effluent: Treated Sewage

1. The permittee is authorized to discharge during the period from **June 1, 2017** through **May 31, 2022**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Ultraviolet light intensity (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25.0	XXX	50	1/week	24-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30.0	XXX	60	1/week	24-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4.0	2/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. B. For Outfall 001 , **Latitude** 40° 13' 10.00" , **Longitude** 76° 50' 12.00" , **River Mile Index** 67.19 , **Stream Code** 06685

Receiving Waters: Susquehanna River

Type of Effluent: Treated Sewage

1. The permittee is authorized to discharge during the period from **June 1, 2017** through **May 31, 2022**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	Report	9132	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	1218	XXX	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

A summary of the most recent inspections during the existing permit review cycle is as follows.

The DEP inspector noted the following during the inspection.

07/06/2017:

- There was nothing significant to report.

06/21/2018:

- The inspection was precipitated by an incident notification to DEP on June 20, 2018 concerning a decant of the #1 SBR tank while aerating. The equalization tank had a brown tint. During inspection, the effluent from the EQ tank had a slight yellow tint. The mechanical origin of the incident was identified as an air-valve located near the blower in the control building. The exact cause of the malfunction was not determined.

12/03/2020:

- An administrative inspection was conducted by telephone and email communications. The purpose of the inspection was in response to an emailed inquiry from the facility concerning sampling that was flagged as exceeding hold-time. Mr. Donald Estep (Environmental Protection Specialist) emailed the Department on 12-3-2020 requested guidance in documenting the flagged CBOD5 sample result. The facility's NPDES Permit No. PA0038385 requires 24-hour composite sampling once per week for CBOD5. DEP recommended that the facility include the result on the Effluent Monitoring Report and use the result in their calculation for monthly average on the DMR. The facility was advised to document that the CBOD5 sample exceeded hold-time in the DMR's comment section

02/13/2020:

- There was nothing significant to report.

05/04/2021:

- An administrative review of Defense Distribution Center-Susquehanna's (DLA) Chesapeake Bay nutrient data for Compliance Year 2020 (October 1, 2019 - September 30, 2020) was completed. - On 2/4/20 and 2/5/20, the flows reported on the Chesapeake Bay supplemental form appearance to be off by a decimal place. The NH3-N result on 1/28/20 was greater than the TKN reported on the same day. The spreadsheet used the higher of the two values to calculate the total nitrogen. It appears that 24-hour effluent composite samples were collected twice per week for nutrient parameters and were analyzed by ALS Environmental (22-00293). The Chesapeake Bay supplemental form attached was a pdf and did not include the nutrient budget page. It does not appear that credits were purchased or sold, or that offsets were applied toward the calculated nutrient totals. During the Compliance Year, DLA discharged.

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.197 MGD. The hydraulic design capacity of the treatment system is 0.32 MGD.

The off-site laboratory used for the analysis of the parameters was ALS Environmental located at 301 Fulling Mill Road, Middletown, PA 17057.

DMR Data for Outfall 001 (from January 1, 2022 to December 31, 2022)

Parameter	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22
Flow (MGD) Average Monthly	0.098	0.061	0.078	0.197	0.125	0.089	0.087	0.104	0.101	0.063	0.078	0.072
Flow (MGD) Daily Maximum	0.63	0.14	0.51	0.12	0.146	0.128	0.141	0.268	0.223	0.095	0.219	0.112
pH (S.U.) Minimum	6.86	7.03	6.89	6.9	6.55	6.53	6.46	6.76	6.56	6.52	6.53	6.6
pH (S.U.) Maximum	7.43	7.42	7.2	7.21	7.11	6.85	6.97	7.08	7.01	6.84	6.77	7.17
DO (mg/L) Minimum	5.56	7.16	6.38	6.0	5.91	6.4	6.09	5.99	6.11	6.48	8.09	6.09
CBOD5 (mg/L) Average Monthly	< 2.3	< 1.00	< 1.0	< 2.0	< 2.10	< 2.2	< 2.0	2.9	2.8	< 2.2	2.7	< 2.0
TSS (mg/L) Average Monthly	< 9.0	< 5.00	< 3.0	< 5.0	< 5.0	< 6.0	< 5.0	9.0	9.0	11.0	12.0	11.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 1.00	< 1.0	< 1	< 1	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 1	2	< 1.0	< 1	2	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
UV Transmittance (%) Instantaneous Minimum	65	65	65	65	65	65	65	65.0	65.0	65.0	65.0	65.0
Nitrate-Nitrite (mg/L) Average Monthly	3.14	< 2.91	3.89	5.45	4.1	2.36	4.31	1.32	< 4.06	5.37	4.36	4.49
Nitrate-Nitrite (lbs) Total Monthly	57	< 55	81	193	143	63	105	32.1	< 126.2	86.6	169.1	209.4
Total Nitrogen (mg/L) Average Monthly	< 4.29	< 4.18	< 5.04	< 6.45	< 5.15	< 3.36	< 5.31	< 3.06	< 5.34	< 6.68	< 5.86	< 5.69
Total Nitrogen (lbs) Effluent Net Total Monthly	< 77	< 80	< 104	< 227	< 179	< 90	< 129	< 75.1	< 163.1	< 108.5	< 228.2	< 276.0
Total Nitrogen (lbs) Total Monthly	< 77	< 80	< 104	< 227	< 179	< 90	< 129	< 75.1	< 163.1	< 108.5	< 228.2	< 276.0

Total Nitrogen (lbs) Effluent Net Total Annual				< 1828.2								
Total Nitrogen (lbs) Total Annual				< 1828.2								
Ammonia (mg/L) Average Monthly	< 0.528	< 0.377	< 0.176	< 0.1	< 0.166	< 0.107	< 0.247	0.86	0.38	< 0.593	< 0.635	0.219
Ammonia (lbs) Total Monthly	< 0.3	< 8	< 4	< 3	< 6	< 3.0	< 6	21.9	10.8	< 10.0	< 18.0	10.0
Ammonia (lbs) Total Annual				< 100.4								
TKN (mg/L) Average Monthly	< 1.2	< 1.3	< 1.2	< 1	< 1.1	< 1.0	< 1	< 1.7	< 1.3	< 1.3	< 1.5	< 1.2
TKN (lbs) Total Monthly	< 20	< 24	< 23	< 35	< 36	< 26	< 24	< 42.9	< 36.9	< 21.9	< 59.1	< 66.6
Total Phosphorus (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.13	0.22	0.21	0.26	< 0.321	0.268	< 0.185	< 0.115	< 0.133
Total Phosphorus (lbs) Effluent Net Total Monthly	< 2	< 2	< 2	< 5	7	6	6	< 7.5	7.8	< 3.1	< 3.6	< 6.7
Total Phosphorus (lbs) Total Monthly	< 2	< 2	< 2	< 5	7	6	6	< 7.5	7.8	< 3.1	< 3.6	< 6.7
Total Phosphorus (lbs) Effluent Net Total Annual				< 62.4								
Total Phosphorus (lbs) Total Annual				< 62.4								

3.2.1 Chesapeake Bay Truing

The table summarizes the facility's compliance/noncompliance with Chesapeake Bay cap loads.

Chesapeake Bay Annual Nutrient Summary
Defense Distribution Center Susquehanna
PA0038385

Year for Truing Period (Oct 1 - Sept 30)	Nitrogen (lbs)	Phosphorus (lbs)	Compliant with Permit Limits (Yes/No)	
	Annual Net Mass Load	Annual Net Mass Load	Nitrogen	Phosphorus
2016	5352	258	Yes	Yes
2017	1433	116	Yes	Yes
2018	1870	71	Yes	Yes
2019	1923	71	Yes	Yes
2021	1729	37	Yes	Yes
2022	796	13	Yes	Yes

Notes:

Annual Net Mass CAP Load =	9132
s Annual Net Mass CAP Load =	1218

3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

From the DMR data beginning in June 1, 2017 to February 7, 2023, the following were observed effluent non-compliances.

Summary of Non-Compliance with NPDES Permit Limits
Beginning June 1, 2017 and Ending February 7, 2023

NON_COMPLIANCE_DATE	NON_COMPL_TYPE_DESC	NON_COMPL_CATEGORY_DESC	PARAMETER	SAMPLE_	VIOLATION_CONDITION	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE	FACILITY_COMMENTS
1/24/2018	Sample collection less frequent than required	Other Violations	Ammonia-Nitrogen						
1/24/2018	Sample collection less frequent than required	Other Violations	Ammonia-Nitrogen (Total Load, lbs)						
1/24/2018	Sample collection less frequent than required	Other Violations	Nitrate-Nitrite as N						
1/24/2018	Sample collection less frequent than required	Other Violations	Total Kjeldahl Nitrogen						
1/24/2018	Sample collection less frequent than required	Other Violations	Total Nitrogen (Total Load, lbs)						
1/24/2018	Sample collection less frequent than required	Other Violations	Total Phosphorus						
1/24/2018	Sample collection less frequent than required	Other Violations	Total Phosphorus (Total Load, lbs)						
3/28/2018	Late DMR Submission	Other Violations							
7/24/2018	Violation of permit condition	Effluent	Fecal Coliform	1270	>	1000	CFU/100 ml	Instantaneous Maximum	See attached document titled "Non-Compliance Form Regarding SRB 2 Issue 06262018 Update"
5/23/2019	Sample collection less frequent than required	Other Violations							
10/23/2019	Other	Other Violations							
3/29/2021	Late DMR Submission	Other Violations							

3.3.2 Non-Compliance- Enforcement Actions

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

Beginning in June 1, 2017 to February 7, 2023, there were no observed enforcement actions.

3.4 Summary of Biosolids Disposal

A summary of the biosolids disposed of from the facility is as follows.

2022			
Sewage Sludge / Biosolids Production Information			
Hauled Off-Site			
2022	Gallons	% Solids	Dry Tons
January			
February			
March	48,000	1.9375	3.88
April			
May			
June			
July			
August			
September	30,000	1.9	2.38
October	12,000	1.9	0.95
November			
December			
Notes:			
Sewage sludge disposed at Capital Region Water in Dauphin County, Harrisburg, PA and at Kline's Services in Lancaster County, Salunga. The sewage sludge is disposed for agricultural utilization.			

3.5 Open Violations

No open violations existed as of February 2023.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be the Susquehanna River. The Susquehanna River discharges into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is PPL Bruner Island (PWS ID # 7670802) located approximately 12 miles downstream of the subject facility on the Susquehanna River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

4.4 2022 Integrated List of All Waters (303d Listed Streams)

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

The receiving waters is listed in the 2022 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 5 waterbody. This stream is an impaired stream for (a) aquatic life due to pH/acidity/caustic from an unknown source; and (b) fish consumption due to PCBs from an unknown source. The designated use has been classified as protected waters for warm water fishes (WWF) and migratory fishes (MF).

4.5 Low Flow Stream Conditions

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 -year time period. The facility discharge is based upon a known design capacity of the subject facility.

The closest WQN station to the subject facility is the Susquehanna River station at Harrisburg, PA (WQN202). This WQN station is located approximately 4 miles upstream of the subject facility.

The closest gauge station to the subject facility is the Susquehanna River station at Harrisburg, PA (USGS station number 1570500). This gauge station is located approximately 4 miles upstream of the subject facility.

For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 8.25 and the stream water temperature was estimated to be 23.75 C.

The hardness of the stream was estimated from the water quality network to be 87 mg/l $CaCO_3$.

The low flow yield and the Q710 for the subject facility was estimated as shown below.

Gauge Station Data			
USGS Station Number	1570500		
Station Name	Susquehanana River at Harrisburg, PA		
Q710	3,200	ft^3/sec	
Drainage Area (DA)	24,100	mi^2	
Calculations			
The low flow yield of the gauge station is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY =	(3,200 ft^3/sec / 24,100 mi^2)		
LFY =	0.1328	$ft^3/sec/mi^2$	
The low flow at the subject site is based upon the DA of		24,300	mi^2
Q710 = (LFY@gauge station)(DA@Subject Site)			
Q710 = (0.1258 $ft^3/sec/mi^2$)(24,300 mi^2)			
Q710 =	3227	ft^3/sec	

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.5
Latitude	40º 13' 18.97"	Longitude	-76º 50' 4.91"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Susquehanna River (WWF)	Stream Code	6685
NHD Com ID	133783761	RMI	66.5
Drainage Area	24,300	Yield (cfs/mi^2)	0.1328
Q_{7-10} Flow (cfs)	3227	Q_{7-10} Basis	StreamStats/Streamgauge
Elevation (ft)	286	Slope (ft/ft)	
Watershed No.	7-C	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired for aquatic life		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Not appl.	Name	

Background/Ambient Data		Data Source
pH (SU)	8.25	WQN202; Median July to Sept
Temperature (°C)	23.75	WQN202; Median July to Sept
Hardness (mg/L)	87	WQN202; Historical Median
Other:		

Nearest Downstream Public Water Supply Intake	PPL Bruner Island		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	53	Distance from Outfall (mi)	12

5.0: Overview of Presiding Water Quality Standards

5.1 General

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

5.2.1 Technology-Based Limitations

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

5.3 Water Quality-Based Limitations

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.1 (WQM Model) and (3) Toxics using DEP Toxics Management Spreadsheet for Toxics pollutants.

The modeling point nodes utilized for this facility are summarized below.

General Data 1	***(Modeling Point #1)***	***(Modeling Point #2)***	***Units***
Stream Code	6685	6685	
River Mile Index	66.5	64.48	miles
Elevation	286	285	feet
Latitude	40.220374	40.203021	
Longitude	-76.837506	-76.806641	
Drainage Area	24300	24301	sq miles
Low Flow Yield	0.1328	0.1328	cfs/sq mile

5.3.1 Water Quality Modeling 7.0

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD5), Ammonia Nitrogen (NH3-N), and Dissolved Oxygen (DO) for single and multiple point source discharges scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD5, and NH_3-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

(a) a *minimum concentration for DO in the discharge as 30-day average;*
(b) a 30-day average concentration for CBOD5 in the discharge;
(c) a 30-day average concentration for the NH_3-N in the discharge;
(d) *24-hour average concentration for NH_3-N in the discharge*.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The applicable WQM Effluent Limit Type are discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.

5.3.2 Toxics Modeling

The Toxics Management Spreadsheet model is a computer model that is used to determine effluent limitations for toxics (and other substances) for single discharge wasteload allocations. This computer model uses a mass-balance water quality analysis that includes consideration for mixing, first-order decay, and other factors used to determine recommended water quality-based effluent limits. Toxics Management Spreadsheet does not assume that all discharges completely mix with the stream. The point of compliance with water quality criteria are established using criteria compliance times (CCTs). The available CCTs are either acute fish criterion (AFC), chronic fish criterion (CFC), or human health criteria (THH & CRL).

Acute Fish Criterion (AFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e.15 minutes travel time downstream of the current discharge) or the complete mix time whichever comes first. AFC is evaluated at Q710 conditions.

Chronic Fish Criterion (CFC) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CFC is evaluated at Q710 conditions.

Threshold Human Health (THH) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the estimated travel time downstream to the nearest potable water supply intake whichever comes first. THH is evaluated at Q710 conditions.

Cancer Risk Level (CRL) measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CRL is evaluated at Qh (harmonic mean or normal flow) conditions.

The Toxics Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

5.3.2.1 Determining if NPDES Permit Will Require Monitoring/Limits in the Proposed Permit for Toxic Pollutants

To determine if Toxics modeling is necessary, DEP has developed a Toxics Management Spreadsheet to identify toxics of concern. Toxic pollutants whose maximum concentrations as reported in the permit application or on DMRs are greater than the most stringent applicable water quality criterion are pollutants of concern. A Reasonable Potential Analysis was utilized to determine (a) if the toxic parameters modeled would require monitoring or (b) if permit limitations would be required for the parameters. The toxics reviewed for reasonable potential were the following pollutants: TDS, chloride, bromide, sulfate, total copper, total lead, and total zinc.

Based upon the SOP- Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants (Revised January 10, 2019), monitoring and/or limits will be established as follows.

(a) When reasonable potential is demonstrated, establish limits where the maximum reported concentration equals or exceeds 50% of the WQBEL.
(b) For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
(c) For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

Applicable monitoring or permit limits for toxics are summarized in Section 6.

The Toxics Management Spreadsheet output has been included in Attachment B.

5.3.3 Whole Effluent Toxicity (WET)

The facility is not subject to WET.

5.4 Total Maximum Daily Loading (TMDL)

5.4.1 TMDL

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up

the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that were found to be the cause of the water quality violations. A Total Maximum Daily Load (TMDL) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include an implicit or explicit margin of safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. The TMDL components are illustrated using the following equation:

$$TMDL = \Sigma WLAs + \Sigma LAs + MOS$$

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

5.4.1.1 Local TMDL

The subject facility does not discharge into a local TMDL.

5.4.1.2 Chesapeake Bay TMDL Requirement

The Chesapeake Bay Watershed is a large ecosystem that encompasses approximately 64,000 square miles in Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York and the District of Columbia. An ecosystem is composed of interrelated parts that interact with each other to form a whole. All of the plants and animals in an ecosystem depend on each other in some way. Every living thing needs a healthy ecosystem to survive. Human activities affect the Chesapeake Bay ecosystem by adding pollution, using resources and changing the character of the land.

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

The overall management approach needed for reducing nitrogen, phosphorus and sediment are provided in the Bay TMDL document and the Phase I, II, and III WIPs which is described in the Bay TMDL document and Executive Order 13508.

The Bay TMDL is a comprehensive pollution reduction effort in the Chesapeake Bay watershed identifying the necessary pollution reductions of nitrogen, phosphorus and sediment across the seven Bay watershed jurisdictions of Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia to meet applicable water quality standards in the Bay and its tidal waters.

The Watershed Implementation Plans (WIPs) provides objectives for how the jurisdictions in partnership with federal and local governments will achieve the Bay TMDL's nutrient and sediment allocations.

Phase 3 WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The latest revision of the supplement was September 13, 2021.

The Chesapeake Bay TMDL (Appendix Q) categorizes point sources into four sectors:

- Sector A- significant sewage dischargers;
- Sector B- significant industrial waste (IW) dischargers;
- Sector C- non-significant dischargers (both sewage and IW facilities); and
- Sector D- combined sewer overflows (CSOs).

All sectors contain a listing of individual facilities with NPDES permits that were believed to be discharging at the time the TMDL was published (2010). All sectors with the exception of the non-significant dischargers have individual wasteload allocations (WLAs) for TN and TP assigned to specific facilities. Non-significant dischargers have a bulk or aggregate allocation for TN and TP based on the facilities in that sector that were believed to be discharging at that time and their estimated nutrient loads.

Cap Loads will be established in permits as Net Annual TN and TP loads (lbs/yr) that apply during the period of October 1 – September 30. For facilities that have received Cap Loads in any other form, the Cap Loads will be modified accordingly when the permits are renewed.

Offsets have been incorporated into Cap Loads in several permits issued to date. From this point forward, permits will be issued with the WLAs as Cap Loads and will identify Offsets separately to facilitate nutrient trading activities and compliance with the TMDL.

Based upon the supplement the subject facility has been categorized as a Sector C discharger. The supplement defines Sector C as a non-significant dischargers include sewage facilities (Phase 4 facilities: ≥ 0.2 MGD and < 0.4 MGD and Phase 5 facilities: > 0.002 MGD and < 0.2 MGD), small flow/single residence sewage treatment facilities (≤ 0.002 MGD), and non-significant IW facilities, all of which may be covered by statewide General Permits or may have individual NPDES permits.

At this time, there are approximately 850 Phase 4 and 5 sewage facilities, approximately 715 small flow sewage treatment facilities covered by a statewide General Permit, and approximately 300 non-significant IW facilities.

For Phase 4 sewage facilities (average annual design flow on August 29, 2005 ≥ 0.2 MGD and < 0.4 MGD), a future decision may be made as to the establishment of Cap Loads in permits. Until then, DEP will permit Phase 4 sewage facilities as follows:

1. Renewed or amended permits for facilities that do not increase design flow (compared to the date of the latest prior permit action) will contain monitoring and reporting for TN and TP throughout the permit term at a frequency no less than monthly.

2. Renewed or amended permits that include an increase in design flow will contain Cap Loads based on the lesser of a) existing TN and TP concentrations at current design average annual flow or b) 7,306 lbs/yr TN and 974 lbs/yr TP.

If no data are available to determine existing concentrations for expanding Phase 4 or 5 facilities, default concentrations of 25 mg/l TN and 4 mg/l TP may be used (these are the average estimated concentrations of all non-significant sewage facilities).

DEP will not issue permits to existing Phase 4 and 5 facilities containing Cap Loads unless it is done on a broad scale or unless the facilities are expanding.

For new Phase 4 and 5 sewage discharges, in general DEP will issue new permits containing Cap Loads of “0” and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance, with the exception of small flow and single residence facilities.

The Phase 3 WIP Supplement published on July 29, 2022 lists the facility as a significant Chesapeake Bay discharger. Significant Chesapeake Bay dischargers are facilities with flow rates of at least 0.4 MGD. This facility has a hydraulic capacity of 0.32 MGD. DEP Central Office anticipates re-categorizing the facility from significant discharger to non-significant discharger. The cap loads shall continue to be retained.

This facility is subject to Sector C monitoring requirements. Monitoring for nitrogen and phosphorus shall be at least 1x/wk.

5.5 Anti-Degradation Requirement

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP’s guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP’s evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.l.1 and 40 CFR 122.l.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
b) a summary of changes from the existing NPDES permit to the proposed permit; and
c) a summary of the proposed NPDES effluent limits.

6.1 Recommended Monitoring Requirements and Effluent Limitations

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection, (b) Nitrogen Species and Phosphorus, and (c) Toxics.

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection Defense Distribution Center, PA0038385			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by best professional judgement.
CBOD	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 25 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 30 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to record the UV intensity.
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised March 22, 2019) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other			
2 Monitoring frequency based on flow rate of 0.2 MGD.			
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97			
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)			
5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021			

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

Defense Distribution Center, PA0038385

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/wk.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/wk.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo as a calculation
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
TKN	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/wk.
Total Phosphorus	Anti-backsliding	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 2.0 mg/l as a monthly average.
		Rationale:	Total Phosphorus (TP) is still a parameter of concern for all sewage treatment facilities in the Chesapeake Bay watershed. The limit was previously established based on BPJ. Due to anti-backsliding, the current permit limit shall continue to the proposed permit
Net Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a calculation.
		Effluent Limit:	Effluent limits shall not exceed 9,132 lbs/yr
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Net Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a calculation.
		Effluent Limit:	Effluent limits shall not exceed 1,218 lbs/yr
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Notes:			

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.2 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.3.1 Implementation of Regulation- Chapter 92a.61

Chapter 92a.61 provides provisions to DEP to monitor for pollutants that may have an impact on the quality of waters of the Commonwealth. Based upon DEP policy directives issued on March 22, 2021 and in conjunction with EPA's 2017 Triennial Review, monitoring for E. Coli shall be required.

6.2 Summary of Changes From Existing Permit to Proposed Permit

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

Changes in Permit Monitoring or Effluent Quality

Parameter	Existing Permit	Draft Permit
Nitrogen Species	Monitoring is 2x/week	Monitoring shall be 1x/week
Phosphorus	Monitoring is 2x/week	Monitoring shall be 1x/week
E. Coli	No monitoring or effluent requirements	Monitoring shall be 1x/quarter

6.3.1 Summary of Proposed NPDES Effluent Limits

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

The proposed NPDES effluent limitations are summarized in the table below.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40º 13' 10.00" , **Longitude** 76º 50' 12.00" , **River Mile Index** 66.5 , **Stream Code** 6685

Receiving Waters: Susquehanna River (WWF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Instantaneous Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25.0	XXX	50	1/week	24-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30.0	XXX	60	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. B. For Outfall 001 , **Latitude** 40° 13' 10.00" , **Longitude** 76° 50' 12.00" , **River Mile Index** 66.5 , **Stream Code** 6685

Receiving Waters: Susquehanna River (WWF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Net Total Nitrogen	XXX	9132	XXX	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	XXX	1218	XXX	XXX	XXX	XXX	1/year	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- SBR Batch Discharge Condition
- Chesapeake Bay Nutrient Definitions
- Solids Management for Non-Lagoon Treatment Systems

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: New and Reissuance Sewage Individual NPDES Permit Applications, rev 2/3/2022
☐	Other:

Attachment A

Stream Stats/Gauge Data

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi², square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	Regulated[1]
01561000	Brush Creek at Gapsville, Pa.	39.956	-78.254	36.8	N
01562000	Raystown Branch Juniata River at Saxton, Pa.	40.216	-78.265	756	N
01562500	Great Trough Creek near Marklesburg, Pa.	40.350	-78.130	84.6	N
01563200	Raystown Branch Juniata River below Rays Dam nr Huntingdon, Pa.	40.429	-77.991	960	Y
01563500	Juniata River at Mapleton Depot, Pa.	40.392	-77.935	2,030	Y
01564500	Aughwick Creek near Three Springs, Pa.	40.213	-77.925	205	N
01565000	Kishacoquillas Creek at Reedsville, Pa.	40.655	-77.583	164	N
01565700	Little Lost Creek at Oakland Mills, Pa.	40.605	-77.311	6.52	N
01566000	Tuscarora Creek near Port Royal, Pa.	40.515	-77.419	214	N
01566500	Cocolamus Creek near Millerstown, Pa.	40.566	-77.118	57.2	N
01567000	Juniata River at Newport, Pa.	40.478	-77.129	3,354	Y
01567500	Bixler Run near Loysville, Pa.	40.371	-77.402	15.0	N
01568000	Sherman Creek at Shermans Dale, Pa.	40.323	-77.169	207	N
01568500	Clark Creek near Carsonville, Pa.	40.460	-76.751	22.5	LF
01569000	Stony Creek nr Dauphin, Pa.	40.380	-76.907	33.2	N
01569800	Letort Spring Run near Carlisle, Pa.	40.235	-77.139	21.6	N
01570000	Conodoguinet Creek near Hogestown, Pa.	40.252	-77.021	470	LF
01570500	Susquehanna River at Harrisburg, Pa.	40.255	-76.886	24,100	Y
01571000	Paxton Creek near Penbrook, Pa.	40.308	-76.850	11.2	N
01571500	Yellow Breeches Creek near Camp Hill, Pa.	40.225	-76.898	213	N
01572000	Lower Little Swatara Creek at Pine Grove, Pa.	40.538	-76.377	34.3	N
01572025	Swatara Creek near Pine Grove, Pa.	40.533	-76.402	116	N
01572190	Swatara Creek near Inwood, Pa.	40.479	-76.531	167	N
01573000	Swatara Creek at Harper Tavern, Pa.	40.403	-76.577	337	N
01573086	Beck Creek near Cleona, Pa.	40.323	-76.483	7.87	N
01573160	Quittapahilla Creek near Bellegrove, Pa.	40.343	-76.562	74.2	N
01573500	Manada Creek at Manada Gap, Pa.	40.397	-76.709	13.5	N
01573560	Swatara Creek near Hershey, Pa.	40.298	-76.668	483	N
01574000	West Conewago Creek near Manchester, Pa.	40.082	-76.720	510	N
01574500	Codorus Creek at Spring Grove, Pa.	39.879	-76.853	75.5	Y
01575000	South Branch Codorus Creek near York, Pa.	39.921	-76.749	117	Y
01575500	Codorus Creek near York, Pa.	39.946	-76.755	222	Y
01576000	Susquehanna River at Marietta, Pa.	40.055	-76.531	25,990	Y
01576085	Little Conestoga Creek near Churchtown, Pa.	40.145	-75.989	5.82	N
01576500	Conestoga River at Lancaster, Pa.	40.050	-76.277	324	N
01576754	Conestoga River at Conestoga, Pa.	39.946	-76.368	470	N
01578310	Susquehanna River at Conowingo, Md.	39.658	-76.174	27,100	Y
01578400	Bowery Run near Quarryville, Pa.	39.895	-76.114	5.98	N
01580000	Deer Creek at Rocks, Md.	39.630	-76.403	94.4	N
01581500	Bynum Run at Bel Air, Md.	39.541	-76.330	8.52	N
01581700	Winters Run near Benson, Md.	39.520	-76.373	34.8	N
01582000	Little Falls at Blue Mount, Md.	39.604	-76.620	52.9	N
01582500	Gunpowder Falls at Glencoe, Md.	39.550	-76.636	160	Y
01583000	Slade Run near Glyndon, Md.	39.495	-76.795	2.09	N
01583100	Piney Run at Dover, Md.	39.521	-76.767	12.3	N

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft³/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/s)
01565000	1941–2008	37	17.6	18.6	28.6	20.3	32.4	24.4
01565700	1965–1981	17	.4	.4	.9	.5	1.1	.8
01566000	1913–2008	52	4.3	7.9	18.8	12.4	25.6	19.2
01566500	1932–1958	27	1.7	2.4	4.0	3.2	5.7	4.9
01567000	[2]1974–2008	35	504	534	725	589	857	727
01567000	[3]1901–1972	72	311	367	571	439	704	547
01567500	1955–2008	54	2.0	2.2	3.3	2.6	3.8	3.1
01568000	1931–2008	78	12.7	15.5	25.5	19.2	32.0	26.0
01568500	[2]1943–1997	55	1.8	2.3	4.3	2.7	5.0	3.1
01569000	1939–1974	14	2.6	4.0	7.4	5.1	9.4	7.8
01569800	1978–2008	31	15.9	17.0	24.4	18.4	26.1	20.3
01570000	[3]1913–1969	35	—	63.1	110	76.1	124	95.3
01570000	[2]1971–2008	38	63.1	69.3	109	78.3	125	97.8
01570500	[3]1901–1972	72	2,310	2,440	4,000	2,830	4,950	3,850
01570500	[2]1974–2008	35	3,020	3,200	5,180	3,690	6,490	4,960
01571000	1941–1995	16	.1	.2	.6	.3	1.2	.8
01571500	1911–2008	62	81.6	86.8	115	94.0	124	105
01572000	1921–1984	14	2.1	2.3	4.8	3.0	6.5	4.5
01572025	1990–2008	17	15.2	16.4	26.7	18.5	34.6	27.7
01572190	1990–2008	17	19.1	20.5	36.2	23.9	45.8	35.3
01573000	1920–2008	89	18.0	22.0	52.0	30.8	69.2	50.9
01573086	1965–1981	17	.5	.6	2.6	.8	3.3	1.1
01573160	1977–1994	18	26.9	29.6	46.4	33.6	51.9	39.5
01573500	1939–1958	20	1.3	1.4	2.5	1.8	3.2	2.6
01573560	1977–2008	30	50.3	62.0	104	76.9	131	108
01574000	1930–2008	79	8.0	11.1	32.0	17.7	47.0	33.9
01574500	[2]1968–2008	41	14.2	24.0	35.9	29.4	42.0	33.3
01574500	[3]1930–1966	34	2.3	7.1	11.5	9.3	14.8	12.7
01575000	[2]1973–1995	23	.7	1.4	6.7	3.2	12.0	9.3
01575000	[3]1929–1971	43	.1	.6	10.3	2.3	15.0	6.1
01575500	[2]1948–1996	49	12.1	18.7	41.3	23.9	50.0	33.8
01576000	[3]1933–1972	40	2,100	2,420	4,160	2,960	5,130	4,100
01576000	[2]1974–2008	35	2,990	3,270	5,680	3,980	7,180	5,540
01576085	1984–1995	12	.4	.5	.8	.7	1.2	1.2
01576500	1931–2008	78	27.2	38.6	79.4	49.1	97.3	66.1
01576754	1986–2008	23	74.2	84.9	151	106	189	147
[4]01578310	1969–2008	40	549	2,820	5,650	4,190	7,380	6,140
01578400	1964–1981	18	1.4	1.5	2.7	1.9	3.2	2.5
[4]01580000	1928–2008	81	19.7	22.8	48.1	28.1	51.8	35.4
[4]01581500	1946–2008	28	.2	.3	1.2	.8	1.7	1.5
[4]01581700	1969–2008	40	4.7	5.5	17.5	8.1	18.3	12.0
[4]01582000	1946–2008	63	11.3	12.5	25.0	15.5	28.0	20.3
[4]01582500	1979–2008	27	41.2	43.9	78.8	53.8	90.6	74.1
[4]01583000	1949–1981	33	.3	.3	.7	.3	1.0	.6
[4]01583100	1984–2008	15	2.1	2.4	5.5	3.2	6.0	4.2

StreamStats Report

Region ID: PA
Workspace ID: PA20230209155737644000
Clicked Point (Latitude, Longitude): 40.22176, -76.83454
Time: 2023-02-09 10:58:09 -0500

Defense Distribution Center PA0038385 Modeling Point #1 February 2023

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	6.07	percent
DRNAREA	Area that drains to a point on a stream	24300	square miles
ELEV	Mean Basin Elevation	1378	feet
FOREST	Percentage of area covered by forest	70.1899	percent

Parameter Code	Parameter Description	Value	Unit
GLACIATED	Percentage of basin area that was historically covered by glaciers	48.528	percent
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.75	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [42.7 Percent (10400 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	24300	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	1.75	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	6.07	percent	0	99

Low-Flow Statistics Parameters [6.6 Percent (1610 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	24300	square miles	2.33	1720
ELEV	Mean Basin Elevation	1378	feet	898	2700
PRECIP	Mean Annual Precipitation	39	inches	38.7	47.9

Low-Flow Statistics Parameters [50.5 Percent (12300 square miles) Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	24300	square miles	4.84	982
PRECIP	Mean Annual Precipitation	39	inches	33.1	47.1
GLACIATED	Percent of Glaciation	48.528	percent	0	100
FOREST	Percent Forest	70.1899	percent	41	100

Low-Flow Statistics Disclaimers [42.7 Percent (10400 square miles) Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [42.7 Percent (10400 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	5020	ft^3/s
30 Day 2 Year Low Flow	5970	ft^3/s
7 Day 10 Year Low Flow	3720	ft^3/s
30 Day 10 Year Low Flow	4410	ft^3/s
90 Day 10 Year Low Flow	5580	ft^3/s

Low-Flow Statistics Disclaimers [6.6 Percent (1610 square miles) Low Flow Region 3]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [6.6 Percent (1610 square miles) Low Flow Region 3]

Statistic	Value	Unit

Statistic	Value	Unit
7 Day 2 Year Low Flow	2180	ft^3/s
30 Day 2 Year Low Flow	2670	ft^3/s
7 Day 10 Year Low Flow	1270	ft^3/s
30 Day 10 Year Low Flow	1580	ft^3/s
90 Day 10 Year Low Flow	2180	ft^3/s

Low-Flow Statistics Disclaimers [50.5 Percent (12300 square miles) Low Flow Region 5]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [50.5 Percent (12300 square miles) Low Flow Region 5]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3140	ft^3/s
30 Day 2 Year Low Flow	3960	ft^3/s
7 Day 10 Year Low Flow	2000	ft^3/s
30 Day 10 Year Low Flow	2590	ft^3/s
90 Day 10 Year Low Flow	3370	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3870	ft^3/s
30 Day 2 Year Low Flow	4720	ft^3/s
7 Day 10 Year Low Flow	2680	ft^3/s
30 Day 10 Year Low Flow	3290	ft^3/s
90 Day 10 Year Low Flow	4230	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.12.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
Workspace ID: PA20230209160232119000
Clicked Point (Latitude, Longitude): 40.20290, -76.80662
Time: 2023-02-09 11:03:10 -0500

Defense Distribution Center PA0038385 Modeling Point #2 February 2023

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	6.07	percent
DRNAREA	Area that drains to a point on a stream	24300	square miles
ELEV	Mean Basin Elevation	1378	feet
FOREST	Percentage of area covered by forest	70.179	percent

Parameter Code	Parameter Description	Value	Unit
GLACIATED	Percentage of basin area that was historically covered by glaciers	48.5147	percent
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.75	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [42.7 Percent (10400 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	24300	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	1.75	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	6.07	percent	0	99

Low-Flow Statistics Parameters [6.6 Percent (1610 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	24300	square miles	2.33	1720
ELEV	Mean Basin Elevation	1378	feet	898	2700
PRECIP	Mean Annual Precipitation	39	inches	38.7	47.9

Low-Flow Statistics Parameters [50.5 Percent (12300 square miles) Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	24300	square miles	4.84	982
PRECIP	Mean Annual Precipitation	39	inches	33.1	47.1
GLACIATED	Percent of Glaciation	48.5147	percent	0	100
FOREST	Percent Forest	70.179	percent	41	100

Low-Flow Statistics Disclaimers [42.7 Percent (10400 square miles) Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [42.7 Percent (10400 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	5020	ft^3/s
30 Day 2 Year Low Flow	5970	ft^3/s
7 Day 10 Year Low Flow	3720	ft^3/s
30 Day 10 Year Low Flow	4410	ft^3/s
90 Day 10 Year Low Flow	5580	ft^3/s

Low-Flow Statistics Disclaimers [6.6 Percent (1610 square miles) Low Flow Region 3]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [6.6 Percent (1610 square miles) Low Flow Region 3]

Statistic	Value	Unit

Statistic	Value	Unit
7 Day 2 Year Low Flow	2180	ft^3/s
30 Day 2 Year Low Flow	2670	ft^3/s
7 Day 10 Year Low Flow	1270	ft^3/s
30 Day 10 Year Low Flow	1580	ft^3/s
90 Day 10 Year Low Flow	2180	ft^3/s

Low-Flow Statistics Disclaimers [50.5 Percent (12300 square miles) Low Flow Region 5]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [50.5 Percent (12300 square miles) Low Flow Region 5]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3140	ft^3/s
30 Day 2 Year Low Flow	3960	ft^3/s
7 Day 10 Year Low Flow	2000	ft^3/s
30 Day 10 Year Low Flow	2590	ft^3/s
90 Day 10 Year Low Flow	3370	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3870	ft^3/s
30 Day 2 Year Low Flow	4720	ft^3/s
7 Day 10 Year Low Flow	2680	ft^3/s
30 Day 10 Year Low Flow	3290	ft^3/s
90 Day 10 Year Low Flow	4230	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.12.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment B

WQM 7.0 Modeling Output Values
Toxics Management Spreadsheet

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
66.500	DDC- Susquehann	P0038385	0.200	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
66.500	DDC- Susquehan	1.77	50	1.77	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
66.500	DDC- Susquehan	.42	25	.42	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
66.50	DDC- Susquehann	25	25	25	25	5	5	0	0

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07K	6685	SUSQUEHANNA RIVER	66.500	286.00	24300.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.133	0.00	0.00	0.000	0.000	0.0	0.00	0.00	23.75	8.25	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
DDC- Susquehann	P0038385	0.2000	0.2000	0.2000	0.000	25.00	6.89

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07K	6685	SUSQUEHANNA RIVER	**64.480**	285.00	24301.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.133	0.00	0.00	0.000	0.000	0.0	0.00	0.00	23.75	8.25	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
66.500	0.200	23.750	8.249
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2354.212	0.701	3358.371	1.956
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.00	0.002	0.00	0.934
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.243	0.935	Tsivoglou	5
Reach Travel Time (days)			
0.063			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.006	2.00	0.00	7.70
0.013	2.00	0.00	7.70
0.019	2.00	0.00	7.70
0.025	2.00	0.00	7.70
0.032	2.00	0.00	7.70
0.038	2.00	0.00	7.70
0.044	2.00	0.00	7.70
0.050	2.00	0.00	7.70
0.057	2.00	0.00	7.70
0.063	2.00	0.00	7.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
66.500	3227.04	0.00	3227.04	.3094	0.00009	.701	2354.21	3358.37	1.96	0.063	23.75	8.25
Q1-10 Flow												
66.500	3033.42	0.00	3033.42	.3094	0.00009	NA	NA	NA	1.89	0.065	23.75	8.25
Q30-10 Flow												
66.500	3711.10	0.00	3711.10	.3094	0.00009	NA	NA	NA	2.11	0.058	23.75	8.25

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☐
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.94	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.15	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Defense Distribution Center Susquehanna** NPDES Permit No.: **PA038385** Outfall No.: **001**

Evaluation Type **Major Sewage / Industrial Waste** Wastewater Description: **Sewage effluent**

Discharge Characteristics									
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.2	100	6.89						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		524									
	Chloride (PWS)	mg/L		192									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		45.82									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L	<	5									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L	<	3									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L		46									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Defense Distribution Center Susquehanna, NPDES Permit No. PA038385, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Susquehanna River**

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	006685	66.5	286	24,300			Yes
End of Reach 1	006685	64.48	285	24,301			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	66.5	0.1328										87	8.25		
End of Reach 1	64.48	0.1328										87	8.25		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	66.5														
End of Reach 1	64.48														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Defense Distribution Center Susquehanna, NPDES Permit No. PA038385, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.003 Analysis Hardness (mg/l): 87.362 Analysis pH: 8.04

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	11.833	12.3	443	Chem Translator of 0.96 applied
Total Lead	0	0		0	55.730	68.7	2,471	Chem Translator of 0.811 applied
Total Zinc	0	0		0	104.505	107	3,841	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 720 PMF: 0.023 Analysis Hardness (mg/l): 87.053 Analysis pH: 8.21

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	7.955	8.29	2,014	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.163	2.67	648	Chem Translator of 0.811 applied
Total Zinc	0	0		0	105.045	107	25,898	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 720 PMF: 0.023 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.032 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

Pollutants	*Mass Limits* AML (lbs/day)	MDL (lbs/day)	*Concentration Limits* AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Copper	284	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	648	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	2,462	µg/L	Discharge Conc ≤ 10% WQBEL